

1ST AND 2ND COVERS										3RD AND 4TH COVERS									
PROCESSING AND PROPERTY INDEX																			
<p>CA</p> <p>Anthracene oil obtained from the pyrolysis of petroleum products. N. M. Karavayev, A. I. Il'minskaya, and A. M. Protasova. <i>Bull. Acad. Sci. U.R.S.S., Chem. Ser. Tech.</i> 1946, 655 (6). In an attempt to explain the occurrence of pyrene and chrysene, in products of the high-temp. pyrolysis of various fuels, in particular, in the coking of coal and the pyrolysis of petroleum, anthracene oil was distd. at atm. pressure into the fractions: (1) up to 270°, (2) 270-330°, (3) 330-360°, and (4) 360-400°. The percentage yields, d.s., and av. mol. wts. detd. cryoscopically in benzene are given, and also contents of C and H of fractions 3 and 4. Fractions 2, 3, and 4 were distd. at 0.5 to 1.0 mm. pressure into the cuts: up to 170°, 170-200°, 200-230°, and 230-250°. Percentage yields are given for each temp. cut, and the phys. properties are briefly described. Fraction 2 was further fractionated into 10° cuts by starting at 160 under 1 mm. Pyrene was found in all of the 10° cuts between 160° and 180°. Fraction 3 was distd. into 10° cuts, from 160° to 240° at 1 mm. Anthracene was found in the 160-170° range, pyrene in the 170-180° and 180-200° fractions, and chrysene in the 200-240° fraction. It is concluded that pyrene forms and appears in all fractions b. ca. 160-200° in notable quantities. Pyrene in fractions 2, 3, and 4 constitutes about 8% of the raw material. Chrysene forms and appears in the fraction b. ca. 200-240° and anthracene is found in traces. Walter Leskowitz</p> <p><i>Instit. Combustible Minerals, AS USSR</i></p> <p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
SUBJECT INDEX										SUBJECT INDEX									
SUBJECT INDEX										SUBJECT INDEX									

KARAVAYEV, N.M.; BLONSKAYA, A.I.

Examination of tars from kerosene pyrolysis. Izv.AN SSSR Otd.tekh.nauk
no.2:215-221 '47. (MIRA 6:12)

1. Chlen-korrespondent Akademii nauk SSSR (for Karavayev). 2. Institut
goryuchikh iskopayemykh Akademii nauk SSSR. (Tar)

21

CA

Treating coals from the Sangar region (Yakutsk A.S. S.R.). N. M. Karavaev and N. N. Dolgoplov. Invest. Akad. Nauk S.S.R., Otdel. Tekh. Nauk 1947, 849-52. These coals yield 12-20% light tar and 62-67% semicoke. A typical light tar consisted of a 12% nonacidic fraction b. 0-200°, a 30% fraction b. 200-300°, which was rich in phenols, and a 58% fraction b. above 300°. H. K. L.

ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION

15

Determination of Pyridine Bases in the Products of the Coke-Chemical Industry. (In Russian.) M. M. Karayev and I. M. Vener. *Bulletin of Academy of Sciences of the U.S.S.R., Section of Technical Sciences*, July 1947, p. 913-922.

Gives a detailed description of the development of a colorimetric method using bromthiocyanogen, which is said to be much more accurate than the sulfuric acid extraction method. Modification for analysis of oils and of saturated alkaline solutions, respectively, are given.

Investigation of Tars From Pyrolysis of Kerosene. (In Russian.) N. M. Karavay and I. M. Vener. *Izvestiya Akademii Nauk SSSR, Otdelenie Tekhnicheskikh Nauk* (Bulletin of the Academy of Sciences of the USSR, Section of Technical Sciences), May 1948, p. 637-642.

Four fractions were separated: light oil, indene fraction, naphthalene, and methylnaphthalene. Properties, amounts, and chemical constants were determined.

KARAVAYEV, N. M.

"Works" (Sochineniya), Vol XI, D. I. Mendeleyev (this volume edited by Corresponding Member of the Academy of Sciences USSR N. M. Karavayev), Academy of Sciences USSR, Moscow/Leningrad, 1949, 584 pages and one enclosure, 38 rubles.

SO: Uspekhi Khimii, Vol 18, #6, 1949; Vol 19, #1, 1950 (W-10083)

1ST AND 2ND COLUMNS		PROCESSING AND PROPERTIES INDEX	
<p>Method of the investigation of chemical composition of the neutral oil of primary coal tars. N. M. Karavayev and A. I. Blonskaya. <i>Doklady Akad. Nauk S.S.S.R.</i> 67, 279-82 (1949).—Minsinsk coal was pyrolyzed in rotating retort at 500-80° yielding a condensate of light and middle coal tar fractions, which on steam distn. at 120° gave 20.6% oil distillate, which after removal of bases and phenols by washing gave 18.5% yield (on coal tar) of</p>		<p>neutral oil. Aromatic content was detd. by sulfonation (40 g. P_2O_5 in 100 ml. H_2SO_4 mixt. with ice-cooling for 0.5 hr.) after detn. of unsatd. deriva. by 5% boric acid in H_2SO_4 with ice-cooling; naphthenes were cold. by differ. ence; such detn. of 3 rough cuts of the oil (b. under 170°, 170-230°, and 230-60°) gave, resp.: aromatic 22.1, unsatd. 10.1, naphthenes 9.1; 19.3%, 13.0%, 5.5%; 4.9%, 3.8%, 1.7% (based on the total neutral oil). The hydrocarbons ranging from C_{10} to C_{20} in these fractions have a low count of naphthene rings (14.32%), as calcd. from mol. wt. (in benzene: 141-220) with the nomogram method (Waterman and Vlugter, <i>J. Ind. Petroleum Technol.</i> 21, 367A(1935)). Oxidation of the unsatd. substances in the neutral oil by $KMnO_4$ yielded $AcOH$, caproic, enanthic, pelargonic, and capric acids. The oil remaining after removal of unsatd. by 85% H_2SO_4 was fractionated in a 25-plate column into 35 fractions each being characterized by phys. const. (not cited); none yielded pierates, hence no C_{11} deriva. were present. Adsorption on SiO_2 from petr. ether and elution by petr. ether and $MeOH$ gave a sepn. as petr. ether elutes naphthenes, while $MeOH$ removes the aromatics; a very clean sepn. was attained by adsorption without solvent, followed by elution with $EtOH$, which gave fractions free of aromatics, in 30-40 min. Similar adsorption method used on the original neutral oil by passing the sample in the eluent into a column moistened with petr. ether gave a clean sepn. of paraffins from the aromatics, with concn. of the unsatd. material in the terminal fractions of the paraffins and in the early fractions of the aromatics.</p> <p>G. M. Kowoloff</p>	
<p>ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION</p>		<p>12-11-1949</p>	

KARAVAYEV, N.M.

5

U S S R

The bitumen from shale of the Godovsk region. N. M. Karavaev, I. M. Vener, and A. V. Karnseva. *Trudy Inst. Goryuch. Khimichesk. Akad. Nauk S.S.S.R.* 2, 286-88 (1950). The bitumen obtained from Godovsk shale is a high-mol. material contg. phenols, ketones, and pyridines. The bitumen reacts with $AlCl_3$ to form alkali-sol. products which contain phenols. Acid hydrolysis yields low-mol. phenols (av. compn. $C_{11}H_{10}O$) and pyridine bases. Oxidation with alk. $KMnO_4$ yields only fatty acids. In spite of the presence of OH groups in the bitumen, only insignificant amts. of H_2O are formed on thermal decompn., indicating the absence of alc. groups. The O of the bitumen is present in the form of CO_2 , CO, and OH groups or in forms not as yet established. J. Rovner Leach

21

CA

Pyrolysis of coal under the action of a high frequency current. N. M. Kalyayev, Yu. I. Sevast'yanov, N. N. Dolgoplov, and Yu. I. Bur'van. *Doklady Akad. Nauk S.S.S.R.* 77, 871-4 (1951).—Heating to up to 1000° was done with the aid of a tube generator of 7 m. wave length (frequency 4.3×10^8 sec.⁻¹). An example of product analysis, semicoke 70.0, tar 11.4, H₂O (total) 10.35, gas and losses 8.25%. The variation of the yield of semicoke with the mean (max.) temp. is illustrated by the data (cheremkhov coal): 356° (470°) 77.2, 372 (418) 70.1, 393 (420) 75.4, 440 (518) 74.5, 452 (567) 74.5, 492 (520) 65.0%. The

compu. of the semicoke produced in the dielec. heating is little different from that obtained in conventional heating to the same temp. However, the yields of tar and of gas are considerably lower, and the compu. of the gas is somewhat different.

N. Thon

1751

KARAVAYEV, N.M.

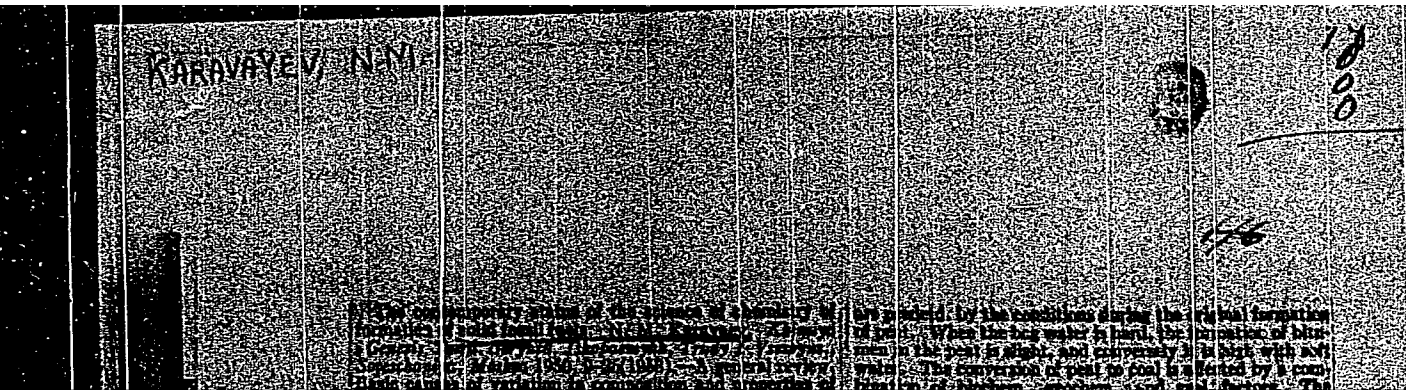
KUDRYAVTSEVA, T.S.; SHEKHTER, M.Ye.; KARAVAYEV, N.M.; REYKHSHTADT, V.Ya.,
redaktor; SHPAK, Ye.I., tekhnicheskiy redaktor

[D.I.Mendeleev and the Russian coal industry] D.I.Mendeleev i
ugol'naya promyshlennost' Rossii. Pod red. N.M.Karavaeva. Moskva,
Ugletekhizdat, 1952. 85 p. (MLRA 7:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Karavayev)
(Mendeleev, Dmitrii Ivanovich, 1834-1907)
(Coal mines and mining)

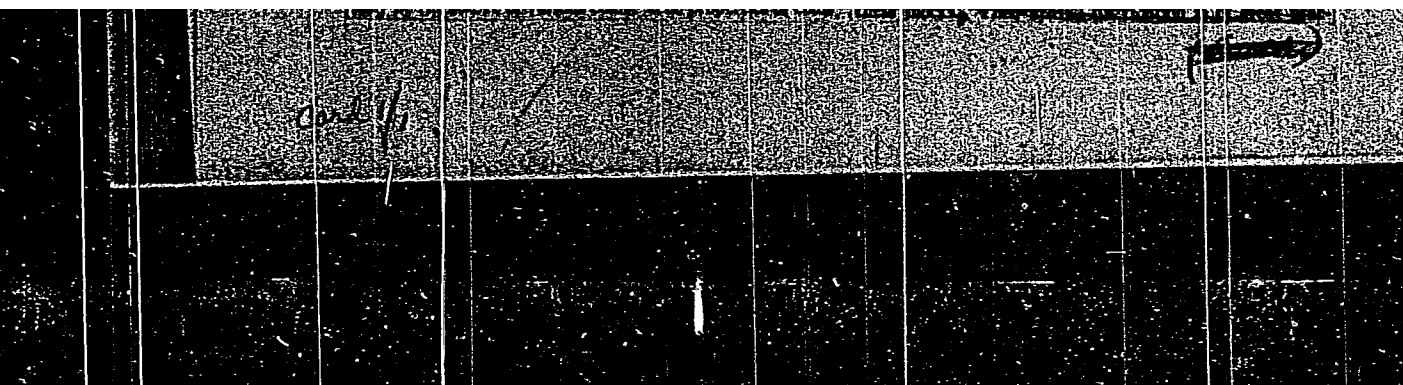
1. KARAVAYEV, N. M.
2. USSR (600)
4. Gas Industry
7. Over-all utilization of coal, oil and gas. Nauka i zhizn' 19 no. 11 . 1952

Monthly Lists of Russian Accessions, Library of Congress, March, 1953, Unclassified.



"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720630003-0



APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720630003-0"

Karavoyev, N. M.

USSR/Chemistry - Low Temp Coking;
Lignite

Sep/Oct 53

"Complex Utilization of Brown Coals of the Ukrainian SSR. 7. Investigation of the Composition of Tar Fractions Obtained by Low Temperature Coking of Brown Coal," N. M. Karavayev, V. I. Kuznetsov, R. P. Govorova, Inst of Heat Power Engng, Acad Sci Uk SSR

Ukrain Khim Zhur, Vol 19, No 5, pp 556-561.

Purification of the ligroin-kerosene and paraffin fractions is best carried out by selective solvent

271T6

extraction. The furfural used as a solvent can be recovered almost completely, and the material extracted applied in the [used] rubber recovery industry.

KARAVAYEV, N. M.

B. T. R.
Vol. 3 No. 3
March 1954
Chemical Engineering

2985 Production of Power and Chemicals From One
Fuel. (Russian.) N. M. Karavayev. *Nauka i Zhizn*, v. 20, no. 7,
July 1953, p. 15-16.
Describes economies of semi-coking low grade fuel. Diagram,
photographs.

KARAVAYEV, N. M.

PHASE X

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 621 - X

BOOK

Call No.: AF644669

Author: VSESOYUZNYI NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT ISKUSSTVENNOGO ZHIDKOGO TOPLIVA I GAZA

Full Title: CHEMISTRY AND TECHNOLOGY OF SYNTHETIC LIQUID FUEL AND GAS. (Works. Issue 6)

Transliterated Title: Khimiya i tekhnologiya iskusstvennogo zhidkogo topliva i gaza. (Trudy. vypusk 6)

PUBLISHING DATA

Originating Agency: Ministry of the Petroleum Industry

Publishing House: State Scientific and Technical Publishing House of Petroleum and Mining-Fuel Literature

Date: 1954

No. pp.: 161

No. of copies: 1,000

Editorial Staff

Karavayev, N. M., Corr. Member, Academy of Sciences, USSR

PURPOSE AND EVALUATION: The book is designed for research chemists working in scientific institutes. The book comprises fourteen independent papers written by the members of the staff of the All-Union Scientific Research Institute of Liquid Fuel and Gas (VNIGI) representing the results of their studies of coals of certain coal deposits, of some problems of the techniques of production of synthetic liquid fuel, and of chemical reactions occurring during the synthesis of hydrocarbons. The book is not intended to be a comprehensive

1/5

Khimiya i tekhnologiya iskusstvennogo zhidkogo
topliva i gaza. (Trudy. vypusk 6)

AID 621 - X

hensive survey of the chemistry and technology of synthetic liquid
fuel and gas. However, it may be of interest to chemists active
in this field.

TEXT DATA

Coverage: The book includes fourteen papers on various aspects of the
chemistry and technology of liquid fuel and gas. As might be expected
in a composite work, there is considerable variation in the method of
handling various topics by the individual contributors. At the end
of each chapter, there is a list of references to the literature of
the subject. Chapter I, on the study of lignites, shows the differ-
ence between lignite and wood, and is well illustrated with tables.
Chapters III, IV, and V are concerned with hydrogenation. The next
chapter (VI), is quite different in character, since it is a litera-
ture survey on the synthesis of hydrocarbons with iron catalysts.
Most of the references are to non-Russian sources (German and
American). In chapter VII, a method is described for determining
the coefficient of thermal conductivity of catalysts used for syn-
thesis, with experimental data compiled in a table. Chapter VIII is
devoted to the manufacture of alcohol from reaction water obtained
in the synthesis of hydrocarbons with an iron-copper catalyst. The

2/5

Khimiya i tekhnologiya iskusstvennogo zhidkogo
topliva i gaza. (Trudy. vypusk 6)

AID 621 - X

following chapter discusses the inhibiting effect of nitrogen-containing heterocyclic compounds on catalytic cracking with aluminosilicates. The purification of phenol-containing waters with oil solvents is the topic of the next chapter. Experiments carried out in VNIGI are described. Chapter XI deals with carboids obtained from Russian coal tar. The topic of the next two chapters is the determination of unsaturated and aromatic hydrocarbons in the kerosine-gas oil fractions obtained from hydrogenation of fuels. The last chapter is an obituary of M. S. Sudzilovskaya, a research chemist of the VNIGI.

Table of Contents

Karavayev, N. M. and Matveyeva, I. I. Study of Lignites	Page 3
Mikheyev, A. P. and Yarosiav, T. Ye. Determination of the Thermal Stability of Fuels used for Gasification	21
Sudzilovskaya, M. S. and Robozheva, Ye. V. Kinetics of Destructive Hydrogenation of Coals	30
Sil'chenko, Ye. I., Shavolina, N. V. and Orochko, D. I. Some Problems of Kinetics of Vapor-Phase Hydrogenation of Aromatized Crude. Part II.	46

3/5

Khimiya i tekhnologiya iskusstvennogo zhidkogo
topliva i gaza. (Trudy. vypusk 6)

AID 621 - X

	Page
Karzhev, V. I., Orochko, D. I. and Rabinovich, B. Ya. Method of Determination of the Rate of Destructive Hydrogenation	55
Fal'kovskaya, A. A. and Rapoport, I. B. Synthesis of Hydrocarbons with Iron Catalysts. Literature Survey.	60
Blyudov, A. P. Determination of the Coefficient of Thermal Conductivity of Catalysts for Synthesis	85
Bezradetskiy, G. N. and Melent'yeva, Ye. L. Preparation of Alcohols from Water Obtained in the Synthesis of Hydrocarbons	90
Orochko, D. I., Frost, A. V. and Shchekin, V. V. Effect of Nitrogen and Oxygen Compounds on Cracking with Aluminosilicates	105
Bezradetskiy, G. N. and Nefed'yeva, O. V. Purification of Tar Water Obtained in Low-Temperature Carbonization, Gasification of Coal, and Hydrogenation of Tars with Oil Solvents	114

4/5

Khimiya i tekhnologiya iskusstvennogo zhidkogo
topliva i gaza. (Trudy. vypusk 6)

AID 621 - X

Page

Morozova, M. V.

130

Composition of Carboids

Milovidova, N. V. and Rapoport, B. M.

Determination of Unsaturated Compounds in Kerosene-
Gas Oil Fractions of Products of Hydrogenation of
Solid Fuels

137

Lipovskaya, K. S.

Cryoscopic Method for Determination of Aromatic
Hydrocarbons in Kerosine-Gas Oil Fractions of the
Products of Destructive Hydrogenation of Fuels

146

159

In memory of Mariya Sergeyevna Sudzilovskaya

No. of References: Total 77. 54 Russian, 1928-1953; 23 non-Russian,
1924-1953.

Facilities: Names of several Russian scientists are mentioned.

5/5

U.S.S.R.

Utilized advantages of the batch rectification of complex mixtures. N. M. Karavayev, D. D. Zykov, and N. B. Kondratov. *Izv. Akad. Nauk S.S.S.R. Otdel. Tekh. Nauk* 1954, No. 3, 123-9. A method of batch rectillation is described with a recycling of intermediate fractions, which increases the capacity of the app. and favors a complete extraction of the product. The method permits a complete extraction of one or more of the components of complex mixtures in one rectification cycle. The method is illustrated by an application to the distillation of coal tar for the recovery of naphthalene, tested on a bench and industrial scale.

W. M. Sternberg

Corresponding Member Acad. Sci. (Karavayev)

LIGNITES, Karavay, Nal, and Matveyev, I.I. (Trud. Vsesoyuz. Inst. Sintet. i Gorn. Khim. Topliva i Gaz (Prod. All Union Sci.-Res. Inst. Synth. Liquid Fuel and Gas), 1954, (6), 3-20; Austr. in Chem. Abstr., 1957, vol. 5, p. 2127). Samples of lignites (1) light yellow in color with the annular rings well visible in the fractured sections; (2) light brown with a weak lustre; and (3) dark brown with a higher gloss than (2), were examined microscopically, analytically, by low temperature carbonization with an analysis of the products, by extraction with dichloroethane, by low temperature carbonization of the extraction residue with dichloroethane and by analysis of the humic acids. Structurally, lignites are very similar to lignin, but differ from it in colour, by the composition of the components and by their elementary composition. They are characterized by a very high sulphur content, and contain nonlignin, insoluble in alkali and acetyl bromide. The dichloroethane and benzene solution bitumens are very similar to pine and fir resin, but differ in composition and contain little resin acids. The high sulphur in lignites is practically all in combination with organic matter. The nonlignin obtained is assumed to be formed concurrently with the humic acid, or is a product of its subsequent changes. An acceleration of lignite was observed in high sulphur lignites, and was never previously mentioned. The resinus formed is similar in appearance to the resinus from fatty bituminous coal.

KARAVAYEV, N. M.

KARAVAYEV, N.M., professor; SHCHENKIN, S.I., professor, zasluzhennyy deyatel'
~~nauchnoy tekhniki~~ RSFSR.

Who is trained at the Moscow Institute of Chemical-Machinery Construction.
Khim.v shkole 9 no.3:77-80 My-Je '54. (MLRA 7:6)

1. Chlen-korrespondent Akademii nauk SSSR (for Karavayev).
(Chemical engineering)

KARAVAYEV, Nikolay Mikhaylovich, professor; PIUSKIY, Iosif Yakovlevich;
SHEPELEV, Ivan Georgiyevich; LAZAREV, N.M., redaktor; SUSHKIN, I.N.,
redaktor; ATTOPOVICH, M.K., tekhnicheskii redaktor.

[Machines and apparatus used in the production of coke] Mashiny i
apparaty koksokhimicheskogo proizvodstva. Pod obshcheired. N.M.Ka-
ravayeva. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvet-
noi metallurgii. Vol. 1. 1955. 299 p. (MIRA 9:6)

1.Chlen-korrespondent AN SSSR (for Karavayev).
(Coke industry--Equipment and supplies)

KARAVAYEV, N. M.

62 ✓ Problems of mass-transfer in plate-type stills. A. G. Bystul'ev, D. D. Zekov, and N. M. Karavayev. *Invent. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1955, No. 8, 110-27. — A method of computation of concn. changes in the vapor phase along the height of the column is proposed, based on the concept of a plate as an independent app. of the cross-over type. The most general types of equations were derived. The equations derived were confirmed experimentally. The computation method derived is based on an old method first proposed by E. Sorel (*La rectification de l'alcool*, 1883), and is a method which assumes a heat and material balance on every plate, that the concn. of the liquid is the same at every point of the plate, and that the vapors on the plate are in equil. with the liquid. Plates operating on this principle were subsequently called the theoretical plates. W. M. Sternberg

(2)

KARAVAYEV, N. M.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 116 - 6/24

Authors : Karavayev, N. M.; Zikov, D. D.; and Garber, Yu. N.

Title : Study of phase equilibriums of a naphthalin-beta-methylnaphthalin system

Periodical : Ukr. khim. zhur. 21/2, 176-181, 1955

Abstract : The naphthalin-beta-methylnaphthalin system was investigated for the purpose of obtaining a high-temperature mixture especially suitable for the distillation of coal tar fractions. The phase equilibrium of the system and the mean enrichment coefficient were established. Both components of the system studied were found to be component parts of coal tar and by their boiling point occupy an intermediate position in the tar. The relation between the crystallization point and composition of the systems is explained. Five USSR references (1941-1953). Table; graphs; drawing.

Institution : The I. V. Stalin Metallurgical Inst., Dnepropetrovsk, and the Moscow Inst. of Chem. Machine Building

Submitted : November 26, 1953

KARAVAYEV, N.M.; ZYKOV, D.D.; KONDUKOV, N.B.

Single stages evaporator designed for the study of high-boiling point mixtures. Zav.lab. 21 no.2:245-246 '55 (MLRA 8:6)

1. Moskovskiy institut khimicheskogo mashinostroyeniya
(Boiling points) (Evaporating appliances)

KARAVAYEV, N. M.

USSR/ Chemistry - Chemical technology

Card 1/1 Pub. 116 - 26/30

Authors : Karavayev, N. M.; Zykov, D. D.; Garber, Yu. N.; Gumenyuk, T. D.; and Sandul, I. V.

Title : Phase equilibriums of naphthalin with coal tar fractions

Periodical : Ukr. khim. zhur. 21/3, 410-415, June 1955

Abstract : The phase conversions of naphthalin with various coal tar fractions was investigated on a laboratory rectification column to determine the effect of low boiling components (heavy fractions) on the phase equilibrium curve. The fact that coal tar and oil form a polyazeotropic mixture was taken into consideration and the results are evaluated. One USSR reference (1955). Tables; graphs.

Institution : The I. V. Stalin Metallurgical Inst., Dnepropetrovsk and the Inst. of Chem. Machine Constr., Moscow

Submitted : December 24, 1953 and January 14, 1955

KARAVAYEV, N. M.

USSR/Chemical Technology, Chemical Products and Their I-13
Application--Treatment of solid mineral fuels

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9217

Author : Garber, Yu. N., Zykov, D. D., and Karavayev, N.M.

Inst : Academy of Sciences USSR

Title : Vapor Pressure of Coal Tar Fractions

Orig Pub: Izv. AN SSSR, Section on Technical Sciences, 1956,
No 4, 101-105

Abstract: A method is described for determining the temperature dependence of the vapor pressure of various coal tar fractions. The coal tar fractions are treated as binary mixtures, one component being a substance, the temperature dependence of the vapor pressure of which is known and the other component being all the other substances boiling above or below the individual substance. A phase equilibrium curve is plotted on the basis of experimental data, and the average vapor pressure of the complex

Card 1/2

Karavayev, N. M.

USSR/Processes and Equipment for Chemical Industries-- K-1
Processes and apparatus for chemical technology.

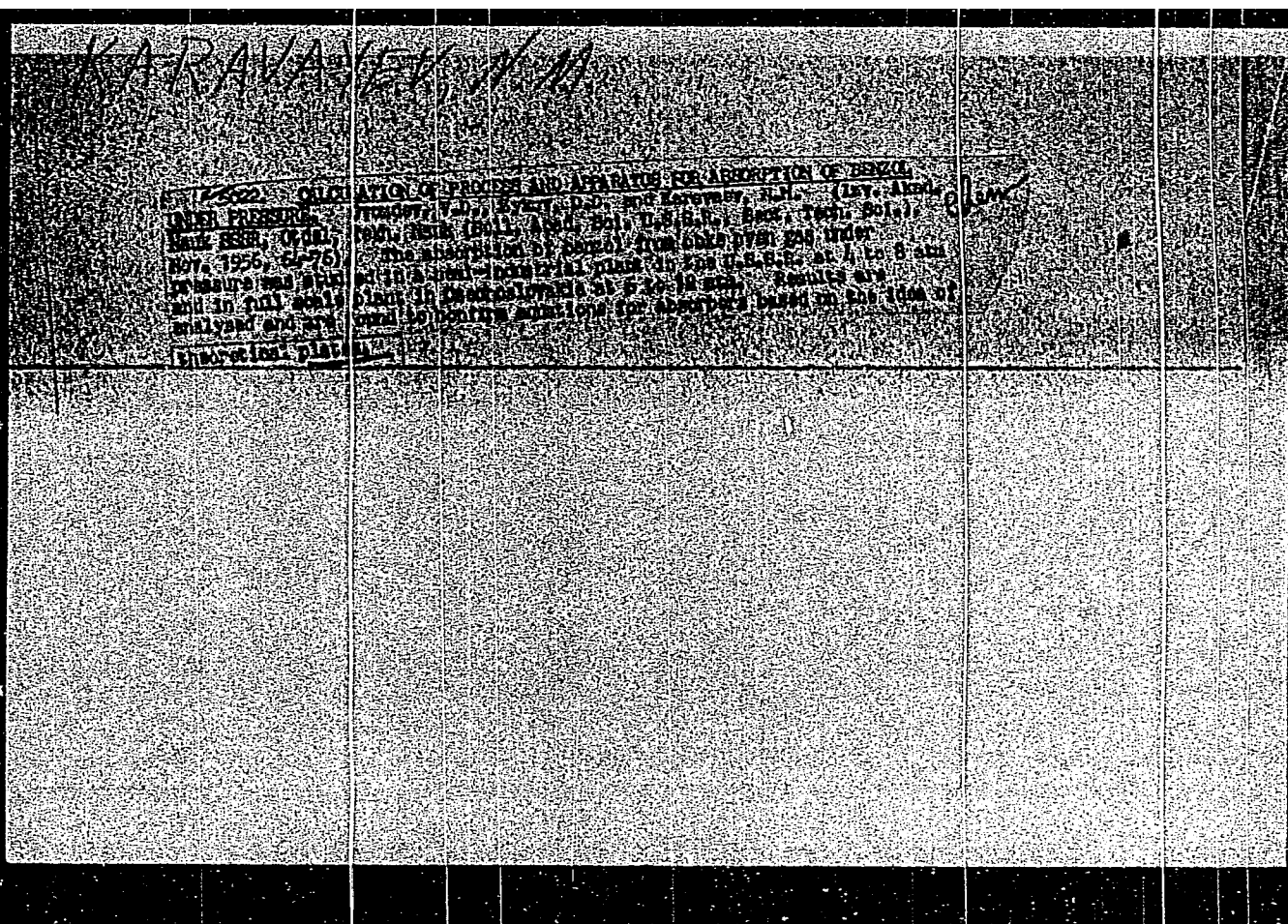
Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10593

Author : Karavayev, N. M. and Maykov, V. P.
Inst : Academy of Sciences USSR
Title : A Method for Determining Heat-Transfer Coefficients in
a Bed of Granular Material

Orig Pub: Izv. AN SSSR, Section on Industrial Sciences, 1956,
No 6, 89-100

Abstract: The authors propose the application of the results from the theoretical solution of the problem of the heating of the heating of a fixed film to the determination of the heat-transfer coefficient for the heating of a layer of granular material by a stream of hot gas under adiabatic conditions. An analytic solution for all values of the criterion $Y = \alpha_v H / (WC_q)$ is given, based on the assumption that no heat is transferred by conduction in the bed; in the above expression α_v is the heat-transfer

Card 1/2



KARAVAYEV, N.M.; ZYKOV, D.D.

Answer to the remarks of B.M. Pats. Ukr.khim.zhur. 22 no.2:265
'56. (MLRA 9:8)
(Phase rule and equilibrium) (Naphthalene) (Pats, B.M.)

✓
TARPIGORSEV, A.M., akademik, redaktor; KARAVAYEV, A.A., otvetstvennyy
redaktor; PAVLOVSKIY, A.A., tekhnicheskoy redaktor

[Terminology of the gas industry] Terminologiya gazovoi tekhniki.
Moskva, 1957. 24 p. (Sborniki rekomendatsykh terminov, no.41)
(MLA 10:10)

1. Akademiya nauk SSSR. Komitet tekhnicheskoy terminologii. 2.
Chlen-korrespondent Akademii nauk SSSR (for Karavayev)
(Gas manufacture and works--Dictionaries)

KARAVAYEN, N.M.

ABRAMOV, S.K., kand.tekhn.nauk; AVERSHIN, S.G., prof., doktor tekhn.nauk;
 AMOSOV, I.I., doktor geol.-min.nauk; ANDRIYEVSKIY, V.D., inzh.;
 ANTROPOV, A.N., inzh.; AFANAS'YEV, B.L., inzh.; BERGMAN, Ya.V.,
 inzh.; BLOKHA, Ye.Ye., inzh.; BOGACHEVA, Ye.M., inzh.; BUKRINSKIY, V.A.,
 kand.tekhn.nauk; VASIL'YEV, P.V., doktor geol.-min.nauk; VINOGRADOV,
 B.G., inzh.; GOLUBEV, S.A., inzh.; GORDIYENKO, P.D., inzh.; GUSEV, N.A.,
 kand.tekhn.nauk; DOROKHIN, I.V., kand.geol.-min.nauk; KALMYKOV, G.S.,
 inzh.; KASATOCHKIN, V.I., doktor khim.nauk; KOROLEV, I.V., inzh.;
 KOSTLIVTSEV, A.A., inzh.; KRATKOVSKIY, L.F., inzh.; KRASHENINNIKOV, G.F.,
 prof., doktor geol.-min.nauk; KRIKUNOV, L.A., inzh.; LEVIT, D.Ye., inzh.;
 LISITSA, I.G., kand.tekhn.nauk; LUSHNIKOV, V.A., inzh.; MATVEYEV, A.K.,
 dots., kand.geol.-min.nauk; MEPUKISHVILI, G.Ye., inzh.; MIRONOV, K.V.,
 inzh.; MOLCHANOV, I.I., inzh.; NAUMOVA, S.N., starshiy nauchnyy sotrudnik;
 NEKIPELOV, V.Ye., inzh.; PAVLOV, F.F., doktor tekhn.nauk; PANYUKOV, P.N.,
 doktor geol.-min.nauk; POPOV, V.S., inzh.; PYATLIN, M.P., kand.tekhn.
 nauk; RASHKOVSKIY, Ya.Z., inzh.; ROMANOV, V.A., prof., doktor tekhn.
 nauk; RYZHOV, P.A., prof., doktor tekhn.nauk; SEL'YATITSKIY, G.A., inzh.;
 SPERANSKIY, M.A., inzh.; TERENT'YEV, Ye.V., inzh.; TITOV, N.G., doktor
 khim.nauk; GOKAREV, I.F., inzh.; TROYANSKIY, S.V., prof., doktor geol.-
 min.nauk; FEDOROV, B.D., dots., kand.tekhn.nauk; FEDOROV, V.S., inzh.
 [deceased]; KHOMENTOVSKIY, A.S., prof., doktor geol.-min.nauk; TROYANOV-
 SKIY, S.V., otvetstvennyy red.; TERPIGOREV, A.M., red.; KRIKUNOV, L.A.,
 red.; KUZNETSOV, I.A., red.; MIRONOV, K.V., red.; AVERSHIN, S.G., red.;
 BURTSSEV, M.P., red.; VASIL'YEV, P.V., red.; MOLCHANOV, I.I., red.;
 RYZHOV, P.A., red.; BALANDIN, V.V., inzh., red.; BLOKH, I.M., kand.
 tekhn.nauk, red.; BUKRINSKIY, V.A., kand.tekhn.nauk, red.; VOLKOV, K.Yu.,
 inzh., red.; VOROB'YEV, A.A., inzh., red.; ZVONAREV, K.A., prof. doktor
 tekhn.nauk, red.

(Continued on next card)

ABRAMOV, S.K.--- (continued) Card 2.

ZDANOVICH, V.G., prof., doktor tekhn.nauk, red.; IVANOV, G.A., doktor geol.-min.nauk, red.; KARAVAYEV, N.M., red.; KOROTKOV, G.V., kand.geol.-min.nauk, red.; KOROTKOV, M.V., kand.tekhn.nauk, red.; MAKKAVEYEV, A.A., doktor geol.-min.nauk, red.; OMEL'CHENKO, A.N., kand.tekhn.nauk, red.; SENDERZON, E.M., kand.geol.-min.nauk, red.; USHAKOV, I.N., dots., kand.tekhn.nauk, red.; YABLOKOV, V.S., kand.geol.-min.nauk, red.; KOROLEVA, T.I., red.izd-va; KACHALKINA, Z.I., red.izd-va; PROZOROVSKAYA, F.L., tekhn.red.; NADEINSKAYA, A.A., tekhn.red.

[Mining; an encyclopedia handbook] Gornoe delo; entsiklopedicheskiy spravochnik. Glav. red. A.M.Terpigorev. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po ugol'noi promyshl. Vol.2. [Geology of coal deposits and surveying] Geologiya ugol'nykh mestorozhdenii i marksheiderskoe delo. Redkolegiia toma S.V.Troianskiy. 1957. 646 p. (MIRA 11:5)

1. Chlen-korrespondent AN SSSR (for Karavayev)
(Coal geology--Dictionaries)

KARAVAYEV, M. M.

LEON, LIGITE, Karavayev, M. M. (Kina, Tempol, Topilva Masel (Oren
Tammol, Poul N/100, Moscow, Jan. 1957, 15-22). With a view to throwing
light on the invasion of Soviet troops, Ligites from South Ural, Aleksandriya
Moscow Region and Bulgaria are recalled. (b)

jud

KARAVAYEV, N.M. (Moskva); STEL'MAKH, G.P. (Moskva)

Effect of internal thermal stresses of solids on heat exchange.
Izv.AN SSSR.Otd.tekh.nauk no.2:36-42 F '57. (MLRA 10:5)
(Thermal diffusivity)
(Heat--Transmission)

KARAVAYEV, N. M.

141. COMPOSITION OF PHENOLS IN PRIMARY TAR FROM BITUMINOUS COALS
OF THE UKRAINIAN S.S.R. Karavayev, N.M., Fedalchova, A.O., and Kuchetsov, V.I.
(Khm. Tekhnol. Topliva Gazov (Chem. Technol. Fuel & Gas, Moscow), Mar 1957, pp. 19-24). With a view to industrial use these phenols were extracted and
fractionated in the laboratory. Results are tabulated. (L).

Inst. Heat Engineering A.S. USSR

AUTHOR: Karavayev, N.M. and Senyanskiy, V.M.

65-4-4/12

TITLE: Semi-coking of Estonian oil shales in an experimental shaft furnace (Polukoksovaniye Estonskikh slantsev v opytnoy shakhtnoy pechi).

PERIODICAL: "Khimiya i Tekhnologiya Topлива i Masel"(Chemistry and Technology of Fuels and Lubricants)1957, No.4, pp.22-28(USSR)

ABSTRACT: A comparison of tar from oil shales produced in shaft and tunnel furnaces is given in Table 1 and principles of operation of the above two types of furnaces are outlined (Fig.1). An experimental shaft furnace was designed incorporating the best features of both tunnel and shaft furnaces (Fig.2). Semi-coking of shale was based on the principle of internal heating with repeated non-reversible forced circulation of the heat-carrying medium. The results obtained are given in Tables 2-5 and Fig. 3. With an optimum temperature of the heat transfer medium (445 C) the yield of tar and its quality were superior to that produced in tunnel furnaces. On the basis of the results obtained an industrial plant was designed (Fig.4), with a daily throughput of 350 tons. A short description of the plant is given. There are 5 tables, 4 figures and 1 Slavic reference.

Card 1/1

ASSOCIATION: Moscow Institute of Chemical Engineering. (Moskovskiy

AVAILABLE: Institut Khimicheskogo Mashinostroeniya)

KARAVAYEV N. M.

AUTHORS: Karavayev, N. M. and Maykov, V. P. (Moscow) 24-11-9/31

TITLE: On determining the coefficients of heat exchange in a layer of granular material. (K opredeleniyu koeffitsientov teploobmena v sloye zernistogo materiala).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.11, pp. 69-74 (USSR)

ABSTRACT: In investigating the heat exchange between flowing gas and a layer of granular material (broken up solids) for determining the coefficient of heat exchange, it is frequently necessary to apply a method which is based on the theoretical solution of the problem of heating of a stationary layer by a flow of gas in absence of thermal resistance of the particles of the layer. In order to be able to evaluate satisfactorily experiments according to this method, the experiments must be effected under conditions in which the heat resistance of the particles of the layer can be disregarded. Saunders and Ford (Ref.2) found and defined the conditions which have to be fulfilled for being able to disregard the internal thermal resistance of the particles of the layer. Since the theoretical solution is based on a layer in which there is no thermal resistance of the particles and the thermal resistance of the particles is dependent on time, this factor should be

Card 1/3

On determining the coefficients of heat exchange in a layer of granular material. 24-11-9/31

taken into consideration when deciding whether a given method is applicable. This was emphasized by Russell in the discussion following the paper of Saunders and Ford and the arguments of Russell were further developed by B. V. Kantorovich (Ref.5). The authors carried out a series of experiments with a layer consisting of glass spheres of 7.02 mm dia. using a technique described by the authors in an earlier paper (Ref.6). The layer of the spheres was placed on a thin grid inside a quartz tube of 59 mm dia. with vacuum walls. Air was blown from the top downwards with a constant air temperature at the inflow of 200°C and the coefficient of heat transfer was determined from the speed of the change in the temperature of the air at the outflow from the layer for a pre-determined instant of time. The results are given and these show that in her work of studying the heat transfer coefficient in a layer of steel balls Ye. A. Shapatina observed all the necessary test conditions, in spite of the fact that the criterion N_{Fo} (meaning not explained) was not taken into consideration and the arguments of B. V. Kantorovich (Ref.5) are not justified that due to

Card 2/3

KARAVAYEV, N. M.

AUTHORS: Zykov, D.D., Karavayev, N.M. and Kondukov, N.B.

68-12-13/25

TITLE: Vapour Phase Purification of Benzole from Sulphurous Compounds (Parofaznaya ochistka benzola ot sernistykh soyedineniy)

PERIODICAL: Koks i Khimiya, 1957, No. 12, pp. 33 - 37 (USSR).

ABSTRACT: The possibility of a continuous purification of benzole from thiophene and other sulphurous compounds by passing a mixture of benzole vapours and hydrogen through a purifying layer in a static or a fluidised state was investigated. The laboratory apparatus used for the investigation is described (Fig.1). The addition of hydrogen or some other diluting gas was necessary as when the fluidisation is obtained by benzole vapours alone, the concentration of sulphur in the vapour is too high. As a purifying medium, iron ore reduced in hydrogen was used. This was activated by a 5% addition of sodium hydroxide. The preparation of the ore is described in some detail. Some of the experimental results obtained are shown in Tables 1 and 2. The results indicated that a complete purification of benzole from all forms of sulphur (including thiophene) can be achieved by passing it through a fluidised or static bed of activated iron ore at 400-450 °C. The optimum velocity of purification in the fluidised bed 9-11 cm/sec at

Card1/2

Vapour Phase Purification of Benzole from Sulphurous Compounds 68-12-13/25

the initial velocity of fluidisation 5-6 cm/sec (400-450 °C).
In a static layer, the optimum velocity is below 0.5 cm/sec.
Summary height of iron ore layer, necessary for complete purification of benzole for the fluidised bed is 300-350 mm and for the static bed 90-100 mm. The sulphur-removing capacity of the purifying mass in respect of thiophene sulphur is 5-6%.
Regeneration of the mass restores its purifying properties.
Laboratory tests and analyses were carried out by Z.I. Anisimova.
There are 2 tables.

ASSOCIATION: MIKhM

AVAILABLE: Library of Congress

Card 2/2

AUTHOR:

KARAVAYEV, N.M., STEL'MAKH, G.P.

TITLE:

The Investigation of Heat Transfer in a Coke Layer. (Issledovaniye teploobmena v sloye koksa, Russian)

PA - 3080

PERIODICAL:

Izvestia Akad.Nauk SSSR, Otdel Tekhn. 1957, Vol 21, Nr 3, pp 134-141 (U.S.S.R.)

Received: 6 / 1957

Reviewed: 7 / 1957

ABSTRACT:

The method used here makes it possible to determine the heat transfer coefficients by means of two time-measurements without having to construct the theoretical and experimental curves of a nonsteady heating or cooling process. This concerns the moment when the heat capacity of the layer is equal to that of the flow passing through the layer. The conditions for the application method are determined by the so-called criterion of the experiment. This reads $KH/d \geq 2$, where $K = \lambda / w_g d$ and H is the height of the layer in m, d is the diameter of the particles in m, λ is the heat conductivity of the material in kcal/m.°C, w is the velocity of the gas in m/sec in the free cross section, and c_g is the heat capacity of the gas in kcal/cbm.°C. Calculation of the three-dimensional heat transfer coefficient α_v (kcal/cbm.°C hour) is carried out on the basis of the determination of the dimensionless criterion by investigation at the moment of equilibrium $Y = \alpha_v H / w_g c_g$. The apparatus and carrying out of the experiment are described. With the evaluation of experimental results,

Card 1/2

KARAVAYEV, N.M., prof., otv.red.; REMENNIK, T.K., red.izd-va; MILEKHIN,
I.D., tekhn.red.

[Study and over-all processing of tars and bitumens from brown
coal of the Dnieper Basin] Izucheniye i kompleksnaya pererabotka
smol i bitumov burykh uglei Dneprovskogo basseina. Kiev. Pt.2.
1958. 127 p. (MIRA 12:5)

1. Akademiya nauk URSS, Kiyev. Institut energetiki. 2. Chlen-
korrespondent AN SSSR (for Karavayev).
(Dnieper Basin--Lignite) (Bitumen) (Coal tar)

AUTHORS: Karavayev, N. M. and Stel'makh, G. P. 68-58-6-7/21

TITLE: On Calculating Thermal Conditions of Plants for Dry
Quenching of Coke (K raschetu teplovogo rezhima
ustanovok sukhogo tusheniya koksa)

PERIODICAL: Koks i Khimiya, 1958, Nr 6, pp 22-26 (USSR)

ABSTRACT: Methods of calculating heat exchange conditions
(between coke and gas) in plants of continuous and
intermittent action for dry quenching of coke are
discussed.
There are 2 tables, 2 figures and 10 references, 3 of
which are Soviet, 1 English and 1 German.

ASSOCIATION: MIKKhM.

1. Coke--Processing 2. Mathematics--Applications

Card 1/1

SOV/24-58-6-12/35

AUTHORS: Yevstaf'yev, A.G., Zykov, D.D. and Karavayev, N.M.
(Moscow)

TITLE: Relative Effect of Certain Factors on the Mass-Exchange Process in a Plate-Type Column Installation (Otnositel'noye vliyaniye nekotorykh faktorov na protses massoobmena v kolonnom apparate tsel'chatogo tipa)

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye tekhnicheskikh nauk, 1958, Nr 6, pp 77-83 (USSR)

ABSTRACT: It has already been shown (eg refs 1-3) that among factors influencing the change in concentration along a plate-type column is mass-transfer between adjacent layers of the moving liquid and the analogous mass transfer in the vapour. The author has previously analysed (ref 1) the change in the concentration of the low-boiling fraction allowing for mixing of liquid and vapour. In the present work the attempts to deduce the influence of this and other factors on the change of concentration of the components along a plate-type column are described. He shows that mass exchange in the inter-plate space can be regarded as the sum of three mass-exchange processes: between liquid and vapour, between adjacent moving liquid

Card 1/3

SOV/24-58-6-12/35
 Relative Effect of Certain Factors on the Mass-Exchange Process
 in a Plate-Type Column Installation

layers, and between layers of vapour. Using his previous (ref 1) relations he shows that the degree of attainment of vapour/liquid equilibrium should always be considered in column design. Because of the complexity of their effect on the overall process the author considers the other two processes by taking the example of a toluene-carbon tetrachloride mixture and examining seven particular cases. These cover various combinations of degrees of mixing in the liquid and the vapour but apply only to the bottom two plates. The results (table 1 and fig 2) show that mixing in the liquid is an important (table 2) but not controlling factor, while mixing in the vapour can be ignored. On this basis column calculations can be classified in four degrees of approximation, depending on the number of the above factors they take into consideration: most methods used for plate coolers belong to the second approximation group, in which only mass exchange between liquid and vapour is considered and can lead to errors of up to 40%. The author elaborates on the weaknesses of this approach and recommends for technical

Card 2/3

SOV/24-58-6-12/35
Relative Effect of Certain Factors on the Mass-Exchange Process
in a Plate-Type Column Installation

calculations the third-approximation method, in which the only factor ignored is mass exchange between adjacent vapour layers and errors of $\pm 2\%$ are obtained. He deduces suitable equations from the more exact fourth approach method and concludes with a numerical example.

There are 2 figures, 3 tables and 3 references (1 Soviet, 1 English and 1 German)

Card 3/3

SOV/24-58-3-33/37

AUTHORS: Budyak, N. F. and Karavayev, H. H. (Moscow)

TITLE: Investigation into the Structure of Neutral Oxygen Compounds of Peat-Tar (Issledovaniye struktury neytral'nykh kislorodnykh soyedineniy torfyanogo degtya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 8, pp 156-157 (USSR)

ABSTRACT: The least studied components of peat-tar are the neutral compounds containing heteroatoms (O, N, S), i.e. silicagel pitches. There were studied oxygen compounds of the middle fraction (200-270°C) of tar, obtained on thermal decomposition of peat by using a solid heat-carrier at $t = 540-560^{\circ}\text{C}$. For the purpose of isolation of the studied compounds from neutral oil, the latter was diluted with petroleum ether and filtered through inactive silicagel. After the hydrocarbons had been removed by washing them off in petroleum ether, the pitch substances which were adsorbed by silicagels were washed off first by benzol (C_6H_6) and afterwards by acetone (CH_3COCH_3). Pitches which were washed off by

Card 1/6

SCV/24-58-B-33/37

Investigation into the Structure of Neutral Oxygen Compounds of Peat-Tar

benzol made up 10.8% of neutral oil and were made the subject of investigation. In appearance they resembled a dark brown and fairly viscous liquid of unpleasant smell. Characteristics of pitches: elementary composition: 78.79% C, 9.07% H, 07.26% O, 3.23% N, 0.65% S - mean molecular weight 550, content of hydroxyl 2%, acid number 4.9 mg KOH/g (caustic potash), ether number 0%. The here given characteristic does not provide the essential indications as to the structure of neutral oxygen compounds and indicates that their composition is complicated. To make the structure of silicagel pitches clear, the method of hydrogenation was applied under conditions which eliminated isomerisation of carbohydrates and enabled the obtaining of products which contained practically no heteroatoms nor olefins (C_nH_{2n}). In literature on the subject (Gunter, Kuennhanss, Huttig, Ref 1), (Kalechits, Pavlova, Ref 2) there are indications that hydrogenation of hydrocarbons above a catalyst 8376 ($Al_2O_3 + WS_2 + NiS$) at a temperature of 340-360°C proceeds without noticeable

Card 2/6

Investigation into the Structure of Neutral Oxygen Compounds of
Peat-Tar

SOV/24-58-8-33/37

splitting and isomerisation of hydrocarbons. The products obtained under these conditions contain practically no heteroatoms, olefins or aromatic compounds. For the purposes of hydrogenation of neutral compounds under investigation, the following conditions were arranged: temperature - 360°C ; catalyst 8376 used in the ratio of 1:1 by weight to the hydrogenized product. Duration of the experiment - one hour. Initial pressure in the autoclave - 150 atm., working pressure - 260-280 atm. For the purpose of hydrogenation there was taken 100 g of pitches and 78.2g of hydrocarbons was obtained, 8 g of water and 160 litres of gas. Gas composition: NH_3 0.2%, CO_2 0.7%, C_nH_{2m} 0%, CH_4 1.8%, N 3.1%, H_2 94.2% shows that hydrogenation proceeded with an inconsiderable splitting off of the light hydrocarbons. Characteristic of the product of hydrogenation n_D^{20} 1.4610, d_4^{20} = 0.8278; elementary composition 86.5% C, 13.4% H, mean molecular weight - 175, empirical formula $\text{C}_n\text{H}_{2m-2.4}$; iodine number

Card 3/6

SOV/24-58-8-33/37

Investigation into the Structure of Neutral Oxygen Compounds of Peat-Tar

equals 2. The product of hydrogenation has been divided into narrow fractions. For each fraction the physical constants were determined; by applying the method: n-d-M, the number of aromatic and naphthenes rings in the molecule and, by sulphurization, the content of aromatic hydrocarbons were determined.

The investigation has shown that the product of hydrogenation consists of hydrocarbon whose boiling temperature is from 80° - 300° and in which the content of aromatic hydrocarbons amounts to 22-35%. All aromatic hydrocarbons from each group had been removed by the sulphurisation method, after which the physical constants were again determined.

$$d_4^{20}, \quad n_D^{20}, \quad r = \frac{n^2 - 1}{n^2 + 2} \cdot \frac{1}{d}$$

and it has been found by using the graph of Gerard the number of naphthenes cycles in the molecule. Additionally, by applying the formula of Sigvalt and Khmelovskiy (Refs 3 and 4) the percentages of naphthenes in each

Card 4/6

S. V/24-58-2-33/37

Investigation into the Structure of Neutral Oxygen Compounds of
Peat-Tar

group were determined. Data obtained by both methods coincided with each other and have shown that the mixture of hydrocarbons after removal of aromatic hydrocarbons contained from 40-100% of naphthenes hydrocarbons and that the considerable percentage of the latter belongs to bicyclic naphthenes. Thus, the composition of hydrogenated hydrocarbons consists of 20.2% paraffinic hydrocarbons, 39.2% monocyclic naphthenes, 20.6 bicyclic naphthenes and 28.0% aromatic hydrocarbons. The investigation has shown that the neutral oxygen compounds of the middle group of the peat-tar consists mainly of carbo-cycles linked with each other by aliphatic chains. Oxygen, nitrogen and sulphur which compose them are essentially present in the side-chains and not in cycles.

Card 5/6

SOV/2A-51-8-32/37
Investigation into the Structure of Neutral Oxygen Compounds of
Peat-Tar

There are 4 references, 1 of which is Soviet, 1 French,
2 German.

(Note: This is a complete translation)

ASSOCIATION: Institut goryuchikh iskopayemykh AN SSSR
(Institute of Mineral Fuels, Ac.Sc., USSR)

SUBMITTED: February 10, 1958

1. Peat--Decomposition
2. Oxygen compounds--Chemical analysis
3. Peat tar--Hydrogenation
4. Hydrocarbons--Chemical properties

Card 6/6

AUTHORS: Karavayev, N.M., Pil'skiy, I.Ya. and Lytkin, I.A. SOV/68-58-10-9/25

TITLE: ~~Coking of Coal-Tar Pitch in a Pseudofluidized Coke Layer~~ (Koksovaniya kamennougol'nogo pitcha v psevdoozhizhennom sloye koksa)

PERIODICAL: Koks i Khimiya, 1958, Nr 10, pp 29 - 33 (USSR)

ABSTRACT: The possibility of the application of coking coal tar pitch on a fluidised bed of coke, as described in the literature for coking petroleum residues (English Refs 1, 3), is discussed. It is pointed out that the application of the fluidised bed technique will permit: increasing the production of coal tar pitch coke without a large capital expenditure; decreasing the production costs; improving the quality of the coke and by-products as the process will be more easy to control; simplifying the preparation of coke for the production of electrodes due to the possibility of producing coke of a more constant composition; producing coke from medium temperature pitch, thus, the process of production of high-temperature pitch will be unnecessary and the coking installation will

Card 1/2

Coking of Coal-Tar Pitch in a Pseudofluidized Coke Layer SOV/68-58-10-9/25

become only a small part of the tar distillation plant.
There are 3 figures and 3 references, 2 of which are
English and 1 Soviet.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya
(Moscow Institute of Chemical Machine Building)

Card 2/2

KARAVAYEV, N.M.

Utilization of fuel and thermal electric power plants. Trudy Inst.
Zapl. AN URSR no.15:3-8 '58. (MIRA 11:10)
(Lignite) (Gases)

AUTHORS: Budyak, N. F., Karavayev, N. M., 1958, 20-120-2-43/63
Corresponding Member, Academy of Sciences, USSR

TITLE: On the Employment of the Chromatographic Method in the
Investigation of Peat Tar Fractions (O primenenii
khromatograficheskogo metoda k issledovaniyu fraktsiy
torfyanykh degtey)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 120, Nr 2,
pp. 376-377 (USSR)

ABSTRACT: This method is employed in the investigation of the
composition of mineral-oil fractions and oils, coal and slate
tar (references 1-3). Peat tars which are, as is well known,
the most complicated of all of these were, however, never
before investigated by this method. The composition and the
methods of investigation are shortly recalled. As 20-25%
of the neutral oil of peat tar were resinified in the
authors' first experiments, they sought for optimum conditions
of separation in 2 directions:
1) A clear separation of hydrocarbon groups on a single
passage through silicagel; thereby changes of the composition
of hydrocarbons taking place in repeated adsorption could

Card 1/3

On the Employment of the Chromatographic Method in the Investigation of Peat Tar Fractions SOV/20-120-2-42/85

be avoided.

2) The selection of such conditions of a single separation in which the polymerization and oxidation of unsaturated hydrocarbons could be reduced to a minimum. A neutral oil of light (95-200°) and medium (200-270°) tar fractions was investigated. The technique is described. By a number of experiments it was found that a reduction of temperature to -5 and -10° considerably reduces the change processes of hydrocarbons in the adsorption-desorption process. As optimum conditions the authors found the following: Silicagel of the type ASK (Russian ACM) with an activity of 12, a ratio of silicagel to the mixture to be separated of 13:1, extract cooling to -15 - -20°. Silicagel ASK (Russian ACK, activity 6) at a ratio to the mixture of 15:1 and cooling to -10 and -15° also yielded fairly good results. On these conditions it is possible to take small liquid samples (10-20 ml) from the column. Thus a sharp boundary can be drawn between the paraffin-naphthene and unsaturated hydrocarbons. Table 1 shows the separation results of 100 g hydrocarbons of the medium fraction in groups. Among others it was found that

Card 2/3

On the Employment of the Chromatographic Method in the SOV/20-120-2-43/65
Investigation of Peat Tar Fractions

the aromatic hydrocarbons contain compounds with unsaturated groups which are attached to the benzene ring. This explains the occurrence of the iodine number in aromatic hydrocarbons. There are 1 table and 4 Soviet references.

ASSOCIATION: Institut goryuchikh iskopayemykh Akademii nauk SSSR
(Institute of Mineral Fuel, AS USSR)

SUBMITTED: February 7, 1958

1. Peat tar--Properties
 2. Hydrocarbons--Polymerization
 3. Hydrocarbons--Separation
 4. Chromatographic analysis
- Applications

Card 3/3

KARAVAYEV, N. M.

"The Early Stage of Formation of Fossil Fuel."

paper to be submitted for the Symposium on the Nature of Coal, Dhanbad, India.
7-9 Feb 1959,

Inst. of Mineral Fuels, Acad Sci. USSR, Moscow,

KARAVAYEV, N.M., prof., otv.red.; SHKURKO, V.L., red.izd-va; MATVEYCHUK,
A.A., tekhn.red.

[Study and complete processing of tars and bitumens of brown
coals from Dnieper Basin] Izuchenie i kompleksnaia pererabotka
smol i bitumov burykh uglei Dneprovskogo basseina. Kiev.
Pt.1. 1959. 108 p. (MIRA 13:2)

1. Akademiia nauk URSR, Kiev. Instytut teploenergetyky. 2. Chlen-
korrespondent AN SSSR (for Karavayev).
(Dnieper Basin--Coal tar)

KARAVAYEV, N.M.

11(7)	PHASE I COAL EXPLOITATION	201/2096
	Academiys nauk SSSR. Institut gosuchibkh iskopyayemykh	
	Genetiz vostochnykh gosuchibkh iskopyayemykh (Genesis of Solid Fuels) Moscow, 88	
	ISSN, 1959. 556 p. Errata slip inserted. 2,000 copies printed.	
	Sponsoring Agency: Vsesoyuznoye khimicheskoye obshchestvo im. D. I. Mendeleeva, Moskovskoye otdeleniye.	
	Resp. Ed.: N. M. Karavayev, Corresponding Member, USSR Academy of Sciences, and N. G. Titov, Doctor of Chemical Sciences, Ed. of Publishing House: A. L. Bankovskiy; Tech. Ed.: I. F. Kus'min.	
	PURPOSE: This collection of articles is intended for geochemists, geologists, and other specialists interested in the genesis of solid mineral fuels.	
	COVERAGE: The collection of papers on the genesis of solid mineral fuels has been presented for publication at the 2nd All-Union Conference on this subject. The formation of humic acids and part from the decomposition of microorganisms and plants is discussed in connection with studies on the origin of hard coal and brown coal and on the role of coalification in the formation of the coal-forming process. The chemical composition of coal and the organic mass of coal is analyzed and shown in a number of tables. Petrographic characteristics of shales are analyzed as are the brown coals of the Dnepropetrovsk basin. Metamorphism and carbonization of coal found in different parts of the Ural and the Uralsian RMR are also discussed. The transformation of parent matter into combustible minerals is analyzed. References accompany individual articles.	
	Handbook, N. M. Karavayev, Genesis of Eocene Khabarovsk Oil Shale	69
	Fordina, A. S. On the Question of the Origin of Baltic Khabarovsk Oil Shale	77
	Karavayev, N. M., and I. A. Yulman. Lignite and Initial Stages of Coal Formation	92
	Sybrayev, Y. Z. Origin of Brown Coal Found in the Dnepropetrovsk Basins of the Uralsian RMR	106
	Chernousova, Ye. M. Irregular Carbonization of Mesozoic Coal Found on the Eastern Flank of the Central and Northern Urals	121
	Bogolyubova, L. I. Petrographic and Chemical Characteristics of Some Types of Coal from Volchanskoye and Kopolovskoye Deposits	137
	Klyukhina, Y. A. Conditions of Formation of Slightly Carbonized Coal from Southern Ural Brown Coal Basin	143
	Kuznetsov, I. A. Metamorphisms of Brown Coal from Kopolovskoye and Volchanskoye Deposits of the Eastern Flank of the Northern Urals	160
	Bludnov, A. I. Geologic Conditions of Transformation of Coal Substances in the South-eastern Part of the Russian Platform	166
	Orlov, Y. V. M. Ye. Some Possible Conditions Under Which Coal Shales Could Have Been Formed at the Kuznetsk Basin	180
	Fedorov, D. I. Evolution of Basic Coal During Metamorphism	189
	Shimshur, I. Ye. Changes in Microscopic Characteristics of Cretaceous Coal of the Kuznetsk Basin During Metamorphism	198
	Kalinin, V. V. Genesis of Arzamas Coal at Perm	201
	Gelber, I. V. Organic Sulfur in Coal	201
	Kashtolkin, V. I. Some General Physical and Chemical Questions Concerning the Coal-forming Process	207
	Prokhorov, B. I. Characteristics of the Process of Transformation of Parent Matter into Present Combustible Minerals and the Connection of These Characteristics With the Principal Properties of Combustible Minerals	220
	Amosov, I. I. Genetic Features of the Coal Substances as Ascertained by Petrographic Findings	229
	Zakharov, V. I. Chemical Nature of the Basic Organic Mass of Hard and Brown Coal and Changes During Metamorphism	249
	Kubarenko, T. A. Changes in the Structure and Properties of Humic Acids During the Coal-forming Process	259
	Titov, N. G. Role of Mineral Elements in the Coal-forming Process	268
	Kozlovskiy, V. B., A. L. Rubinshteyn, and A. Z. Turvinsky. Genesis of Organic Sulfurous Compounds Contained in Coal	276

11(0), 5(0)

AUTHOR:

Karavayev, N. M., Corresponding Member, Academy of Sciences,
USSR

SOV/30-59-2-5/60

TITLE:

Solid Fuel - an Important Source of Chemical Raw Material
(Tverdoe toplivo - vazhnyy istochnik khimicheskogo syr'ya)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 2, pp 20-29 (USSR)

ABSTRACT:

The discovery of atomic power and the great progress in the field of chemical synthesis make it necessary to check our opinion on mineral fuel. Besides mineral oil and natural gas solid fuel is the most important raw material basis for the industry dealing with the synthesis of organic substances. It is coked. Yield and composition of the by-products depend upon temperature conditions of coking. The table gives data on the work of the Konstantinovka Plant. The utilization of the coke gases leaves much to be desired. Further, the average composition of the gas and the yield of the individual by-products are mentioned. Coking at low temperatures and the destructive hydrogenation are regarded as the most important processes in the course of treatment of mineral fuel. The latter is based upon the papers by V. N. Ipat'yev. Until recently

Card 1/2

KARAVAYEV, N.M.; RUMYANTSEVA, Z.A.; VALIULINA, F.M.; BURYAKOVA, E.P.

Semicoking of slightly caking and noncaking coal of the
Fan-Yagnob deposit. Izv. Otd. est. nauk AN Tadzh. SSR
no.3:27-38 '59. (MIRA 15:5)

1. Institut khimii AN Tadzhikskoy SSR.
(Ayni District--Coal--Carbonization)

ONUSAYTIS, Boris Antonovich; KARAVAYEV, N.M., otv.red.; ZABAVIN, V.I.,
red.izd-va; ZELENKOVA, Ye.V., tekhn.red.

[Formation and structure of coal coke] Obrazovanie i struktura
kamennougol'nogo koksa. Moskva, Izd-vo Akad.nauk SSSR, 1960.
419 p. (MIRA 13:4)

1. Chlen-korrespondent AN SSSR (for Karavayev).
(Coal) (Coke)

KARAVAYEV, N.M.; RUMYANTSEVA, Z.A.; SHEVCHENKO, B.I.; MAMAYEVA, A.M.

Chemical and petrographic composition and properties of the
Fan-Iagnob coals and their relation with the initial conditions
of accumulation and transformation of vegetable material.
Report No. 1: Changes in the chemical and petrographic composition
and properties of the Fan-Iagnob coals in connection with the
strike of strata from the west to the east. Trudy Inst. khim.
AN Tadzh. SSR 3:5-22 '60. (MIRA 14:12)
(Tajikistan--Coal geology)

VOYNALOVICH, M.V.; KARAVAYEV, N.M.; SIPOVSKIY, G.V.

Rapid method for quantitative determination of phosphorus in
coals. Trudy Inst. khim. AN Tadzh. SSR 3:23-50 '60. (MIRA 14:12)
(Phosphorus)
(Coal--Analysis)

KARAVAYEV, N.M.; RUMYANTSEVA, Z.A.; VOYNALOVICH, M.V.

Laboratory investigation of the coking properties of Fan-Iagnob
coals. Trudy Inst. khim. AN Tadzh. SSR 3:51-98 '60. (MIRA 14:12)
(Tajikistan--Coal--Analysis)

KARAVAYEV, N.M.; PEVZNER, Z.I.; MAMAYEVA, A.M.

Oxidation and changeability of Fan-Iagnob coals in pile storage.
Report No.2. Trudy Inst. khim. AN Tadzh. SSR 3:115-137 '60.
(MIRA 14:12)

(Tajikistan--~~Coal~~--Storage)

KARAVAYEV, N.M.; PEVZNER, Z.I.

Change in the composition and properties of Fan-Iagnob coals
in artificial low-temperature oxidation. Trudy Inst. khim. AN
Tadzh. SSR 3:139-147 '60. (MLIA 14:12)
(Tajikistan--Coal--Analysis)

KARAVAYEV, N.M.; RUMYANTSEVA, Z.A.; VOYNALOVICH, M.V.; REYMAN, I.V.

Chemical nature and properties of Kshtut-Zauran coals. Trudy
Inst. khim. AN Tadzh. SSR 3:147-182 '60. (MIRA 14:12)
(Tajikistan-Coal---Analysis)

BUDYAK, N.F. (Moskva), KARAVAYEV, N.M. (Moskva)

Methods of sapropel component analysis. Izv. AN SSSR. Otd. tekhn.
nauk. Ser. 1 topl. no.6:164-167 M-D '60. (MIRA13:12)
(Sapropels--Analysis)

KARAVAYEV, N.M.

Objectives of the coke industry. Zhur. VKHO 5 no.1:2-9 '60.
(MIRA 14:4)

1. Chlen-korrespondent AN SSSR.
(Coke industry)

SHORIN, S.N., doktor tekhn. nauk, prof., red.; SHCHEPKIN, S.I., zasl. deyatel' nauki i tekhniki, prof., otv. red.; LASTOVTSEV, A.M., prof. red.; KARAVAYEV, N.M., prof., red.; KOKOREV, D.T., prof., red.; PETROKAS, L.V., prof., red.; RESHCHIKOV, P.M., dots., red.; SOKOLOV, S.N., prof., red.; SOKOLOV, S.I., prof., red.; KHODZHAYEV, A.M., dots., red.; LEBEDEV, K.I., kand. tekhn. nauk, dots. red.; TAIROVA, A.L., red. izd-va; UVAROVA, A.F., tekhn. red.

[Investigation and calculation of heat engineering and power generating processes] Issledovaniia i raschety teploenergeticheskikh i energo-khimicheskikh protsessov; sbornik statei. Pod red. S.N.Shorina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 137 p. (MIRA 14:10)

1. Moscow. Institut khimicheskogo mashinostroyeniya.
(Heat engineering) (Power engineering)

KARAVAYEV, N.M. (Moskva); YAN KHUAN [Yang Huang] (Moskva)

Effect of water on coal at high temperatures and pressures.
Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl. no.4:150-159
Jl-Ag '61. (MIRA 14:8)

(Coal geology)

(Chemistry organic--Synthesis)

GRIGOR'YEVA, K.V. (Moskva); KARAVAYEV, N.M. (Moskva)

Investigating carbonyl compounds of the middle fraction of
peat tar. Izv. AN SSSR. Otd. tekhn. nauk. Met. 1 topl. no. 4:166-
174 JI-Ag '61. (MIRA 14:8)

(Carbonyl compounds)
(Chromatographic analysis)

FRIDMAN, G.Ye. (Moskva); KARAVAYEV, N.M. (Moskva); SEMENKO, M.G. (Moskva);
PERESLENI, I.M. (Moskva)

Investigating the chemical composition of carbohydrate fraction
of shale oil and catalysates. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl.
no.5:155-163 S-0 '61. (MIRA 14:10)
(Coal tar products--Analysis)

GRIGOR'YEVA, K.V. (Moskva); KARAVAYEV, N.M. (Moskva)

Conditions for the selective recovery of neutral oxygen compounds
of peat tar. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl. no.5:164-167.
S-0 '61. (MIRA 14:10)

(Oxygen compounds) (Tar acids)

PIL'SKIY, I.Ya.; KARAVAYEV, N.M.

In coke shops. Koks i khim. no.10:28-32 0 '61. (MIRA 15:1)

1. Moskovskiy institut khimicheskogo mashinostroyeniya.
(Coke industry--Equipment and supplies)

DMITRIYEV, S.A.; KARAVAYEV, N.M.; SMIRNOVA, A.V.

Synthesis of surface active agents based on ω -chlorocarboxylic
acids. Izv.AN SSSR.Otd.khim.nauk no.10:1800-1803 0 '61.
(MIRA 14:10)

1. Institut goryuchikh iskopayemykh AN SSSR.
(Surface active agents) (Acids, Organic)

KARAVAYEV, N.M.

Mineral solid fuel and the objectives of science. Izv. AN
SSSR. Otd. tekhn. nauk. Met. i topl. no.1:15:22 Ja-F '62.
(Coal research)

GRIGOR'YEVA, K.V. (Moskva); KARAVAYEV, N.M. (Moskva)

Investigation of neutral oxygen compounds of light fractions
of peat tar. Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl.
no.1:184-187 Ja-F '62. (MIRA 15:2)
(Oxygen compounds)
(Peat tar)

KARAVAYEV, N.M. (Moskva); VALIBEKOV, Yu.V. (Moskva)

Investigation of bituminous brown coal. Izv. AN SSSR. Otd. tekhn.
nauk. Met. i topl. no.2:145-151 Mr-Ap '62. (MIRA 15:4)
(Bituminous coal--Testing)

KOROVKINA, L.A. (Moskva); KARAVAYEV, N.M. (Moskva)

Composition of pyrolytic tar from the continuous coking process.
Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl. no.2:161-167 Mr-Ap
'62. (MIRA 15:4)

(Pyrolysis) (Coal tar products)

KARAVAYEV, N.M.; RYBAIKO, Z.M.

Studying the chemical nature of rhabdopyrite of the Lipovets
deposit in the Upper Sulfur Basin. Izudy DVFAN SSSR. Ser. khim.
no. 6244-59 '62. (MIRA 17:8)

AKOPYAN, L.A.; VARYGIN, N.N.; GUTAREV, V.V.; ZYKOV, D.D.; KARAVAYEV, N.M.;
KONDUKOV, N.B.; LASTOVTSEV, A.M.; MAKAROV, Yu.I.; MAZUROV, D.Ia.;
MARTYUSHIN, I.G.; MASLOVSKIY, M.F.; NIKOLAYEV, P.I.; PLANOVSKIY,
A.N.; RYCHKOV, A.I. [deceased]; CHEKHOV, O.S.; KHVAL'NOV, A.M.;
SHAKHOVA, N.A.

Theory and practice of heterogeneous processes in a fluidized
bed. Trudy MIKHM 26:3-22 '64. (MIRA 18:5)

FRIDMAN, G. Ye.; SUKHODROVSKAYA, K. A.; LAKOMSKAYA, G. V.;
~~KARAVAYEV, N. M.~~

Coal carbonization during heating in the presence of water
under pressure. Trudy IGI 17:76-87 '62. (MIRA 15:10)

(Coal—Carbonization) (Water vapor)

KOROVKINA, L. A.; KARAVAYEV, N. M.

Composition of pyrolysis tar obtained in the process of continuous
coking of coals. Trudy IGI 17:129-144 '62.

(MIRA 15:10)

(Coal--Carbonization) (Coal-tar products)

KARAVAYEV, N. M.; KAZAKOV, Ye. I.; TYAZHELOVA, A. A.; PANFILOVA, Ye. N.

Yield and composition of light phenols obtained from a mean-
temperature brown coal tar and their utilization. Trudy IGI
17:145-151 '62. (MIRA 15:10)

(Phenol condensation products) (Coal tar)

KARAVAYEV, N.M. (Moskva); AMAGAYEVA, V.N. (Moskva)

Thermal and graphic determination of the mineral components of coals.
Izv. AN SSSR. Otd. tekhn. nauk. Energ. i transp. no. 1:89-95 Ja-F '63.
(MIRA 16:5)

(Coal—Analysis)

KARAVAYEV, N.M. (Moskva); KHU TSZUN-DIN [Hu TSung-ting]

Fuchwanian liptobiolith and its semicoking in an experimental furnace with direct flow multiple heat carrier circulation. Izv. AN SSSR. Otd. tekhn. nauk. Energ. i transp. no.3:390-394 My-Je '63. (MIRA 16:8)

TSVETKOV, O.N.; DMITRIYEV, S.A.; KARAVAYEV, N.M.; KORENEV, K.D.

Coal chemical cresols as raw material for the production of
surface-active substances. Koks i khim. no.10:40-44 '63.
(MIRA 16:11)

1. Institut goryuchikh iskopayemykh AN SSSR.

L 52332-65	EWA(j)/EWA(b)-2/EWT(1)	Pa-1	RO
ACCESSION NR: AP5015648	JR/0064/64/000/007/0184/0491 24 B		
AUTHOR: Korenev, K. D.; Karavayev, N.M.; Dmitriyev, S.A.; Tsvetkov, O. N.			
TITLE: Phenols from shale resin--raw material for the chemical industry			
SOURCE: Khimicheskaya promyshlennost', no. 7, 1954, 484-491			
TOPIC TAGS: phenol, shale oil, tanning material, insecticide, fungicide			
<p>Abstract: One of the first products obtained from shale phenols are synthetic tannides used as tanning agents. Sulfonation of phenols promotes increased tanning properties of products synthesized from the phenols. However, this stage is complicated by the tendency of shale resins to be oxidized, and also by the steric hindrance of polysubstituted phenols. A sulfite-cellulose extract containing ligninsulfonates and carbohydrates is used for condensation with sulfonated phenols. The optimal ratio of reagents is 0.3:1.0. The condensation products (viscous dark-brown mass soluble in water) have good tanning properties. Studies have shown that it is possible to replace natural tanning agents with a preparation made from shale resins. The tanning agents can be obtained both from purified and crude shale resins, from high-boiling and low-</p>			
Card	1/2		

L 52332-55

ACCESSION NR: AP5015648

boiling fractions. Dinitro-derivatives of phenols have interesting insecticidal, fungicidal, and bactericidal properties. Based on the higher fractions of shale resins (above 300° C) unsuitable for synthesizing the preparation 125, a new preparation of insecticidal action of the type of alpha-naphthyl-N-methylcarbamate -- sevin has been developed. This reduces the activity of cholinesterase of insect pests without entering into reaction with enzymes. The preparation is harmless to plants in a wide range of concentrations and is of low toxicity to animals. By acetylation of shale resins of the diesel fraction using acetic anhydride on a boiling water bath, products were obtained (at a 98% yield) exhibiting fungicidal action against 10 kinds of fungi. Phenylacetates are a dark mobile liquid with a specific odor, boiling at 95-100°C (16 mm Hg), is insoluble in water and soluble in organic solvents. Orig. art. has 1 figure, 2 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

NO REF SOV: 077

ENCL: 00

OTHER: 019

SUB CODES: OC, GC

JPRS

Card

2/2 JMB

KARAVAYEV, H.M.; VENER, R.A.; KOROLEVA, K.I.

Composition and chemical nature of sapropelic acids. Dokl.
AN SSSR 156 no. 4:877-879 Je '64. (MIRA 17:6)

1. Institut goryuchikh iskopayemykh AN SSSR. 2. Cheln-
korrespondent AN SSSR (for Karavayev).

KORENEV, K.D.; DMITRIYEV, S.A.; KARAVAYEV, N.M.; TSVETKOV, O.N.

Phenols of oil shale tar as raw material for the chemical industry.
Khim. prom. no.6:401-407 Je '64. (MIRA 18:7)

TSVETKOV, O.N.; KOFENEV, K.D.; KARAVAYEV, N.M.; DMITRIYEV, S.A.

Certain problems involved in the use of the KU-2 cation-exchange resin in the process of alkylation of phenols by higher olefins. Dokl. AN SSSR 157 no.5:1171-1173 Ag '64.

(MIRA 17:9)

1. Institut goryuchikh iskopayemykh Gosudarstvennogo komiteta po toplivnoy promyshlennosti pri Gosplane SSSR. 2. Chlen-korrespondent AN SSSR (for Karavayev).